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ABSTRACT

The State of Alaska Department of Education has created a handbook to give assistance and direction to its school districts and communities in determining the suitability of various building sites for educational facilities planning. This handbook establishes a set of basic site selection elements and offers suggested evaluation criteria for rating each element's desirability and cost effectiveness. The selection elements are grouped into three major categories: social and land use factors; construction cost factors; operations and maintenance cost factors. The handbook describes the basic evaluation procedures including the ranking system for each site selection criteria. It concludes with advice on writing a site evaluation report. Appendices contain a site evaluation matrix form with the three categories and each criteria element arranged for ranking and rank totalling, and a sample site graphic analysis. (GR)

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ED 431 307

Alaska Department of Education

# Site Selection Criteria and Evaluation Handbook

EF 005 423

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# Introduction

## Overview

The perfect school site can be envisioned as generally level with some topographic interest, having complete utilities, stable, well drained soils, excellent road and pedestrian access, protection from excessive weather patterns, with ample space for school facilities, playground and sports fields. The site would be accessible to present and future populations and be free of any natural or environmental hazards. It would be removed from undesirable business, industry and traffic hazards but be convenient to important public facilities and recreational/outdoor learning areas. In most communities, however, the perfect site is elusive and difficult to find.

School siting is also a serious public policy decision. Land availability, land use, public sentiment and other community issues can have dramatic influence on site selection. In any site selection process, local involvement and judgments regarding the relative significance of selection criteria are important.

Finally, site selection for school facilities has a direct and lasting impact on the resources of the State of Alaska. Both the economic resources and the natural resources of the state are affected by the construction and operation of public schools. Primarily in response to these factors, the state recognizes the need for careful and thorough evaluation of school sites.

## Authority

The guidelines incorporated in this handbook have been developed to give assistance and direction to Alaska school districts and communities in determining the suitability of various building sites for educational facilities planning. They are based upon AS 14.11.013 and 14.11.100, which provides for department review of projects to ensure they are in the best interest of the state. This provision is further developed by regulation 4 AAC 31.025 which requires approval of educational facility sites under paragraph (a) and investigations by the appropriate local governing body for suitability in paragraph (d). This handbook establishes the basic considerations for an adequate site selection process. Other products of similar detail may be used to fill the requirements laid out in statute and regulation.

# Basic Procedures

**Site Selection Elements**

This handbook establishes a set of basic site selection elements and offers suggested evaluation criteria for rating the elements. Although the document does incorporate an internal weighting factor (it lists a few key ranking criteria elements which have high cost impacts in more than one sub-category) it does not prescribe the importance of most selection elements but rather, incorporates a weighting system whereby a district or community can assign a range of importance to each element. It is recognized that information for all the elements cannot always be determined nor are all elements applicable to every site. However, detail and rigor in addressing the elements is important for an effective evaluation.

The selection elements are grouped into three major categories as follows:

1. ***Social and Land Use Factors***

2. ***Construction Cost Factors***
   - *a) Soils/Foundations*
   - *b) Utilities*
   - *c) Other*

3. ***Operations and Maintenance Cost Factors***

The site selection elements form the basis for an evaluation matrix which is shown in **Appendix A** and is included as a spreadsheet on the disk included with this handbook. Step one of the process is to review these elements for applicability to the project and sites being considered.

**Weighting Factors (WF)**

After finalizing the site selection elements, the next step is to assign weighting factors to each element. Assignment of the weighting factors is the district/community's opportunity to apply its values to the evaluation process so that the final scores for each site reflect issues involved at the local level. This is often accomplished through community surveys, public meetings and other such forums for developing consensus among the parties affected by the school project. A suggested model for the district/community weighting factors is shown below:

***Weighting Factors***

*1 = not very important*
*2 = somewhat important*
*3 = important*
*4 = very important*
*5 = essential*

## Basic Procedures (cont.)

### Applying Ranking Criteria

Following the assignment of the weighting factors, each selection element is evaluated according to established criteria and ranked on the simple five point scale from 0 to 4. The detailed ranking criteria to be used, which differentiates as needed between rural and urban sites, is described following this section on **Basic Procedures**. The table below gives a suggested definition of each ranking score:

***Criteria Ranking Scores***

*0 = unacceptable (least desirable/least cost effective)*
*1 = poor*
*2 = fair*
*3 = good*
*4 = excellent (most desirable/most cost effective)*

### Tabulating and Analyzing Results

Using the Site Evaluation Matrix (Appendix A) enter the criteria ranking scores for each element. Compute the total score for each site by multiplying each criteria score by the weighting factor and sum them. An example of a portion of the Site Evaluation Matrix is shown below:

**Maintenance and Operating Cost Factors**

| Criteria | WF | Sites | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | xWF | 2 | xWF | 3 | xWF | 4 | xWF |
| Site Drainage | 3 | 4 | 12 | 3 | 9 | 3 | 9 | n/a | n/a |
| Flooding | 4 | 4 | 16 | 4 | 16 | 2 | 8 | n/a | n/a |
| Site Erosion | 4 | 3 | 12 | 3 | 12 | 3 | 12 | n/a | n/a |
| Sun Orientation | 2 | 2 | 4 | 1 | 2 | 1 | 2 | n/a | n/a |
| Protection from Elements | 2 | 3 | 6 | 3 | 6 | 2 | 4 | n/a | n/a |
| Proximity to Natural Hazards | 4 | 0 | 0 | 3 | 12 | 4 | 16 | n/a | n/a |
| Alternative Energy Sources | 3 | 1 | 3 | 1 | 3 | 2 | 6 | n/a | n/a |
| Air Inversions/Katabatic Winds | 2 | 4 | 8 | 4 | 8 | 4 | 8 | n/a | n/a |
| **TOTALS** | | | **61** | | **68** | | **65** | | **n/a** |

The total scores for each site represent a detailed analysis; the highest score should indicate the most desirable site. If the district or community, based on factors not captured by the evaluation, desires to choose a site other than the site receiving the highest score, a narrative justification of this position will need to be developed for inclusion in the site selection report.



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# Ranking Criteria Elements

## Size of Site

**Criteria**:
Site size varies by student enrollment and grade levels served. For very small schools, use the following minimums:

- 10-25 students 4 acres
- 26-50 students 6 acres
- 50-99 students 8 acres
- For all populations above 100, use the guidelines from the *CEFPI Guide for School Facility Appraisals - Alaska Edition:*
  - Elementary School 10 acres plus one for each 100 students
  - Middle School 20 acres plus one for each 100 students
  - High School 30 acres plus one for each 100 students
  - K-12 School 20 acres plus one for each 100 students

| **Evaluation**: | **Scores**: |
|---|---|
| Size 40% or more below standard | 0 |
| Size within 20% of standard | 1 |
| Size within 10% of standard | 2 |
| Size equal to standard | 3 |
| Size at 10% or more above standard | 4 |

## Proximity to Population to be Served

**Criteria:**
Ideally, all students served by the school would be in convenient, safe walking distance to the site. In communities with roads, convenient vehicle/bus travel is also important. Evaluate this criteria using the anticipated population distribution when the school is at capacity (i.e. 5 year post-occupancy). Use the following standard, evaluating for both elements and using the lowest score:

- 50% of students served are within reasonable walking distance (i.e. ¼ mile or less) and,
- 90% of students served are within a 15 minute vehicle/bus ride

| **Evaluation**: | **Scores**: |
|---|---|
| Proximity 40% or more below standard | 0 |
| Proximity within 20% of standard | 1 |
| Proximity within 10% of standard | 2 |
| Proximity equal to standard | 3 |
| Proximity at 10% or more above standard | 4 |

## Ranking Criteria Elements (cont.)

**Proximity to Future Expansion of Community**

**Criteria:**
Occasionally, schools are constructed on sites that within 20 years are no longer adjacent to population centers and/or residential areas. This criteria assesses long-range planning and land use factors related to school sites. Use a subjective evaluation of how well the site corresponds to future expansion and land use in the community to score this criteria. Answer the question, "Is this a good long-term site for a school?"

| **Evaluation**: | **Scores**: |
|---|---|
| Incompatible with future expansion | 0 |
| Significant variances with future expansion | 1 |
| Some variances with future expansion | 2 |
| Corresponds well with future expansion | 3 |
| Corresponds ideally with future expansion | 4 |

**Proximity to Important Existing Facilities**

**Criteria:**
In some instances, a district/community can identify an existing facility (e.g. swimming pool, food service, etc.) which is shared between multiple schools and to which close proximity is essential or desired. If more than one facility is important, this criteria may have to be scored multiple times. In most cases the adjacency is important because it involves student transit. Use the following standard:

- students served are within a short walking distance (i.e. 1/8 mile [660ft.] or less)

| **Evaluation**: | **Scores**: |
|---|---|
| Proximity 40% or more below standard | 0 |
| Proximity within 20% of standard | 1 |
| Proximity within 10% of standard | 2 |
| Proximity equal to standard | 3 |
| Proximity at 10% or more above standard | 4 |

## Ranking Criteria Elements (cont.)

### Year-round Accessibility

**Criteria:**
Ideally, the site should be easily accessible during all times of the year regardless of weather and temperature effects on paths, walks or roads. In some communities, access may improve during winter due to frozen water/wetlands. In other communities, winter may cause the most difficult accessibility problems. Evaluate this criteria assuming standard amenities for site accessibility are provided (i.e. walks, roads, bridges, etc.). Costs for providing these amenities should be covered in other criteria.

| **Evaluation**: | **Scores**: |
|---|---|
| Site is inaccessible during certain times of the year | 0 |
| Access is routinely interrupted by weather/temperature conditions | 1 |
| Access is periodically over swampy, unstable soils | 2 |
| Typically year-round well drained ground/road access | 3 |
| Fully accessible; only severe storms may temporarily hinder access | 4 |

### Aesthetic Value

**Criteria:**
Sites can be assessed for the quality of their surroundings such as vegetation, topography, views and surroundings. Because aesthetic value is subjective, it is important that the local residents establish the aesthetic criteria considering each of the categories mentioned above. Use a subjective evaluation of the aesthetic merits of the site and answer the question, "What would it take to make this site aesthetically pleasing?"

| **Evaluation**: | **Scores**: |
|---|---|
| Will never be aesthetic | 0 |
| Has few natural aesthetic features and little potential | 1 |
| Has some aesthetic features; potential for more with considerable effort | 2 |
| Could have many aesthetic features with minimal efforts | 3 |
| Has many aesthetic features naturally | 4 |

## Sun Orientation

**Criteria:**
The site should allow designs to take full advantage of available sun angles. Locating outside play areas to receive sunlight normally makes them a more desirable place for activity. A facility can benefit from the solar gain of winter sunlight. Large stands of trees, north-facing slopes and adjacent structures can be detrimental. Evaluate this criteria based on the year-round use of the facility.

| **Evaluation**: | **Scores**: |
|---|---|
| Site is in constant shadow during fall, winter and spring months | 0 |
| Site is mostly in shadow during winter months with some fall/spring sun | 1 |
| Site is mostly exposed winter sun | 2 |
| Site is exposed to year-round sun with some obstructions | 3 |
| Site is exposed to full year-round sunlight; no obstructions | 4 |

## Protection from Elements

**Criteria:**
The site should provide protection from prevailing winds which intensify cold temperatures, dust, driving rain and drifting snow. Topography, orientation and site vegetation relative to cold winter winds can be important both for indoor and outdoor educational activities. Sites with some type of wind protections are desirable over those exposed to harsh winds (this is especially critical in coastal areas). Evaluate this criteria based on natural features. Costs of compensating for inadequate protection should be covered in other criteria.

| **Evaluation**: | **Scores**: |
|---|---|
| Site is fully exposed to prevailing winds; no obstructions | 0 |
| Site is mostly exposed to prevailing winds | 1 |
| Site is partially protected from prevailing winds; some natural barriers | 2 |
| Site is mostly protected from prevailing winds | 3 |
| Site offers full protection from prevailing winds | 4 |

## Ranking Criteria Elements (cont.)

### Site Drainage

**Criteria:**
Sites with good drainage are easier to develop and maintain. Good drainage reduces the chance of water or ice collecting around a facility which could cause undermining, decay and/or frost heave leading to structural damage. It could also make general use and occupancy of the site difficult. Evaluate this criteria based on natural features. Costs of compensating for inadequate drainage should be covered in other criteria.

| **Evaluation:** | **Scores:** |
|---|---|
| Site is a generally low; surrounding areas drain into it | 0 |
| Drainage collects in some areas within the site | 1 |
| Drainage collects in areas adjacent to the site | 2 |
| Site has positive drainage; water contribution from surrounding areas is easily accommodated | 3 |
| Site has positive drainage; no water contribution from surrounding areas | 4 |

### Proximity to Natural Hazards

**Criteria:**
Ideally, the site would have no susceptibility to damage (facilities, utilities, etc.) from natural disasters. These would include "acts of God" such as earthquakes, avalanches/landslides, volcanic activity as well as health and safety hazards such as bluffs/steep cliffs, bodies of water and sewage/garbage disposal areas. Evaluate this criteria based on natural features and the historical occurrence of those hazards listed above. Costs of compensating for hazards should be covered in other criteria.

| **Evaluation:** | **Scores:** |
|---|---|
| Site in proximity to five or more hazards | 0 |
| Site is in proximity to four or fewer hazards | 1 |
| Site is in proximity to three or fewer hazards | 2 |
| Site is in proximity to one hazard | 3 |
| Site free of any potential damage/injury from natural hazards | 4 |

## Ranking Criteria Elements (cont.)

### Zoning/Land Use

**Criteria:**
Current and projected zoning and land use should be compatible with the use of the site for a school. If local regulations do not currently permit educational facilities, it could be a lengthy process to obtain a change in zoning or a conditional use permit. Evaluate this criteria according to the difficulty and associated risk.

| **Evaluation:** | **Scores:** |
|---|---|
| Present/future zoning does not permit use of the site for a school | 0 |
| Not zoned for schools but change or exemption can be requested | 1 |
| Current zoning will allow schools as conditional use | 2 |
| Currently zoned for schools; not likely to change | 3 |
| Present/future zoning permits schools or no zoning restrictions exist | 4 |

### Site Soils/Foundation Conditions

**Criteria:**
Ideal sites contain well graded, stable soils with high soil bearing pressure. Soil conditions should allow conventional, economical foundation systems which can meet or exceed a 50 year life expectancy with little maintenance. Soil conditions which can adversely affect construction include discontinuous permafrost, silts and clays, substantial surface or sub-surface organic and high water contents (all susceptible to frost heave). Sites should be assessed for the quality of their soil based on known conditions or on-site investigations.

| **Evaluation:** | **Scores:** |
|---|---|
| Unstable soils throughout; highly specialized foundation required | 0 |
| Mostly unstable soils; specialized foundation required | 1 |
| Isolated area of the site have unstable soils, some specialized found. likely | 2 |
| Most areas of the site have stable soils; conventional foundation possible | 3 |
| Stable soils; conventional foundation system possible | 4 |

## Ranking Criteria Elements (cont.)

### Availability of Water Utilities

**Criteria:**
Connection into an existing, reliable water supply system with adequate capacity is preferred. Sites closest to the existing system would be rated highest. When considering adequacy, don't forget fire suppression system requirements. If a new water system is required for the site, then sites should be rated as to their potential to support/provide the system. For new systems, proximity to wells, lakes or rivers may be a factor. Evaluate this criteria based on known improvements and/or natural features as described above. Costs of providing water utility should be covered in other criteria.

| **Evaluation**: | **Scores**: |
|---|---|
| No existing system; no known/potential water supply near site | 0 |
| No existing water system; potential water supply near site | 1 |
| No existing water system available; known water supply at site | 2 |
| Adequate, reliable water system is available adjacent to or near the site | 3 |
| Adequate, reliable water system is available within the site | 4 |

### Availability of Sewage Utilities

**Criteria:**
Connection into an existing, reliable waste/sewer system with adequate capacity is preferred. Sites closest to the existing system would be rated highest. If a new sewer system is required for the site, then sites should be rated as to their potential to support/provide the system. For new systems, perking soils, space for lagoons and availability of effluent outfalls may be a factor. Evaluate this criteria based on known improvements and/or natural features as described above.

| **Evaluation**: | **Scores**: |
|---|---|
| No existing system; no known/potential waste handling area near site | 0 |
| No existing sewer system; potential locations for sewer system near site | 1 |
| No existing sewer system available; known location/method avail. on site | 2 |
| Adequate, reliable sewer system is available adjacent to or near the site | 3 |
| Adequate, reliable sewer system is available within the site | 4 |

## Ranking Criteria Elements (cont.)

### Availability of Electrical Power

**Criteria:**
Connection into an existing, reliable electrical system with adequate capacity is preferred. Sites closest to the existing system would be rated highest. If a new electrical system is required for the site, then sites should be rated as to their potential to support/provide the system. For new systems, space for generators, space for fuel storage and availability of fuel may be a factor. Evaluate this criteria based on known improvements and projected requirements.

| **Evaluation:** | **Scores:** |
|---|---|
| No existing system; known difficulties for generation on site | 0 |
| No existing power system; good potential for power generation near site | 1 |
| No existing power system available; known power generation at site | 2 |
| Adequate, reliable power system is available adjacent to or near the site | 3 |
| Adequate, reliable power system is available within the site | 4 |

### Availability of Fuel Storage/Distribution

**Criteria:**
Connection into an existing, reliable fuel storage/distribution system with adequate capacity is preferred. Sites closest to the existing system would be rated highest. If a new fuel system is required for the site, then sites should be rated as to their potential to support/provide the system. For new systems, proximity to delivery points, available land for tankage, etc. may be a factor. Evaluate this criteria based on known improvements and/or natural features as described above. Costs of providing fuel utility should be covered in other criteria.

| **Evaluation:** | **Scores:** |
|---|---|
| No existing system; known difficulties for fuel storage on site | 0 |
| No existing fuel system; good potential for fuel system near site | 1 |
| No existing fuel system available; known fuel system location on site | 2 |
| Adequate, reliable fuel system is available adjacent to or near the site | 3 |
| Fuel system is not required or is available on site | 4 |

**Proximity to Fire Response Equipment**

**Criteria:**
This may or may not influence site selection in rural areas since many villages have no organized fire protection. In areas which would have fire hydrants with a continuous/reliable water supply and/or a fire station, sites may be rated by response time or whether a site is within the service area. In facility design, sprinkler systems may be specified which become part of the fire protection equipment which is independent of site location except as it relates to water supply. Use the following standard:

- site is within a service area and is in close proximity to a fire station (i.e. 4 miles or less)

| **Evaluation**: | **Scores**: |
|---|---|
| Proximity 40% or more below standard | 0 |
| Proximity within 20% of standard | 1 |
| Proximity within 10% of standard | 2 |
| Proximity equal to standard | 3 |
| Proximity at 10% or more above standard | 4 |

**Ease of Transporting Construction Materials**

**Criteria:**
Proximity to transportation routes which can support heavy equipment and loads can affect the usability of a site for construction. This criteria is not to measure the cost of getting construction materials to a community or geographic area but evaluates the local impact of transporting materials to the site. Sites closest to the transportation route will be most easily serviced. Evaluate based on the following:

| **Evaluation**: | **Scores**: |
|---|---|
| Site is inaccessible | 0 |
| Transporting materials/equipment will be very difficult | 1 |
| Transporting materials will be difficult | 2 |
| Transporting will be fairly easy, routes will need upgrading | 3 |
| Transporting of equipment/materials will be simple; on established routes | 4 |

## Ranking Criteria Elements (cont.)

### Site Availability

**Criteria:**
Land status availability is one of the most fundamental criteria for locating capital improvements. The title to the site should be free of legal encumbrances, platted and surveyed with an accurate legal description and have a single owner. Evaluate as follows:

| **Evaluation:** | **Scores:** |
|---|---|
| Clear or unclear title, owner/seller not interested | 0 |
| Uncertain title/boundaries; multiple owners | 1 |
| Some encumbrances/easements, etc., multiple owners | 2 |
| Clear title, recent survey, possibly available | 3 |
| Clear title, recent survey, definitely available | 4 |

### Site Cost

**Criteria:**
Land parcels should be available at an affordable cost. The most favorable situation is one in which the parcel is public land available at no cost to the district or available by donation from a private entity. Obviously, the cost of some parcels may be totally beyond the available funds. Evaluate as follows:

| **Evaluation:** | **Scores:** |
|---|---|
| Site is cost prohibitive | 0 |
| Site is above fair market value but within reach | 1 |
| Site is available at fair market value | 2 |
| Site is available below fair market value | 3 |
| Site is available at no cost or has a nominal administrative fee | 4 |

## Ranking Criteria Elements (cont.)

### Alternative Energy Sources

**Criteria:**
In some cases it may become feasible/cost effective to use the waste heat from an electrical generation plant, or some other low-cost alternative energy source for heating the new facility. All other criteria being equal, this may become an important factor. Evaluate as follows:

| **Evaluation**: | **Scores**: |
|---|---|
| Site has no possibilities for alternative energy systems | 0 |
| n/a | 1 |
| Site is adjacent to alternative energy systems; significant effort to develop | 2 |
| n/a | 3 |
| Site is adjacent to alternative energy systems; easily developed | 4 |

### Permafrost Stability

**Criteria:**
The best method in dealing with permafrost is to avoid it if possible. If the whole area is underlain with permafrost, then a site with well drained, non-frost-susceptible soils is preferred since there is less chance of encountering an ice wedge/lens, which, when melted will cause unstable soil conditions. Evaluate as follows:

| **Evaluation**: | **Scores**: |
|---|---|
| No soils testing; obvious signs of discontinuous permafrost | 0 |
| Soils test silt and clay, known permafrost conditions | 1 |
| Undetermined soil conditions; no obvious signs of permafrost | 2 |
| Limited soils information; most of site free of permafrost | 3 |
| Site soils tested, no permafrost present | 4 |

## Ranking Criteria Elements (cont.)

### Flooding

**Criteria:**
Flooding potential from adjacent bodies of water should be considered. Ideally, the site would not be located within a flood plain of flood-prone area.

| **Evaluation**: | **Scores**: |
|---|---|
| Site floods routinely | 0 |
| Site is within flood plain boundaries | 1 |
| Site is in close proximity to flood prone areas | 2 |
| Site is in proximity to bodies of water but well above flood plain | 3 |
| Site is not in flood plain; no nearby bodies of water | 4 |

### Site Erosion

**Criteria:**
Sites which border on eroding river banks and eroding sea spits should be evaluated on how much and how often erosion takes place to determine if a facility would be endangered. Slopes which have been cleared of vegetation can also erode due to heavy rain. Evaluate this criteria based on natural features and the historical occurrence of those hazards listed above. Costs of compensating for hazards should be covered in other criteria.

| **Evaluation**: | **Scores**: |
|---|---|
| Known erosion potential | 0 |
| n/a | 1 |
| Moderate erosion potential; mostly during construction | 2 |
| n/a | 3 |
| No erosion potential; not near water or at toes of slopes | 4 |

## Ranking Criteria Elements (cont.)

### Air Inversions/Katabatic Winds

**Criteria:**
During winter under clear sky/no wind conditions, cold air flows down hillsides settling in low-lying areas. This causes temperatures to be colder at low-lying sites (especially in the Interior where there may be little wind). In regions where this occurs often during the winter, sites which are on a hillside are preferred over sites in low-lying areas. Evaluate as follows:

| **Evaluation**: | **Scores**: |
|---|---|
| Site has continuous winter Katabatic accumulations | 0 |
| Site is routinely affected by Katabatic accumulation; annually | 1 |
| Site is in areas of occasional Katabatic wind; not every season | 2 |
| Site is adjacent to areas of known Katabatic accumulation | 3 |
| Site is on a hillside above cold air accumulation areas | 4 |

### Existing Site Development

**Criteria:**
Vacant, undeveloped land is preferable; if developed or currently used, alternative sites must be available for existing uses. Evaluate based on the magnitude of existing uses requiring relocation and/or demolition and the simplicity of the action.

| **Evaluation**: | **Scores**: |
|---|---|
| Site has many existing uses; will all be problematic to relocate/demolish | 0 |
| | 1 |
| Has 2000 square feet or less in existing uses; all relocatable/demo | 2 |
| | 3 |
| Site has no existing uses | 4 |

## Ranking Criteria Elements (cont.)

### Access to Outdoor Recreation/Learning

**Criteria:**
Students benefit when complimentary park and recreation resources are located near public schools. Recreation and nature areas available by walking provide opportunities to use the outdoors as an extension of the classroom. Evaluate according to the following standard:

- site is contains or is adjacent to outdoor recreation/nature area (i.e. 1/8 mile or less)

| **Evaluation**: | **Scores**: |
|---|---|
| Proximity 40% or more below standard | 0 |
| Proximity within 20% of standard | 1 |
| Proximity within 10% of standard | 2 |
| Proximity equal to standard | 3 |
| Proximity at 10% or more above standard | 4 |

### Noise

**Criteria:**
Incompatible noise such as from air traffic, vehicle traffic, industrial uses, etc. is detrimental to educational delivery. Evaluate this criteria based on actual or anticipated noise factors according to the following standard:

- sound decibel level is below 65db sustained and 75db peak

Costs for mitigating these factors will be covered in other criteria.

| **Evaluation**: | **Scores**: |
|---|---|
| Sound level 40% or worse than standard | 0 |
| Sound level within 20% of standard | 1 |
| Sound level within 10% of standard | 2 |
| Sound level equal to standard | 3 |
| Sound level 10% or more better than standard | 4 |

## Ranking Criteria Elements (cont.)

### Wetlands

**Criteria:**
Wetlands should be avoided due to the adverse impact on cost and schedule. Evaluate as follows:

| **Evaluation:** | **Scores:** |
|---|---|
| 100% of site is classified as wetlands; significant impact to building | 0 |
| Most of the site is wetlands; considerable impact to building likely | 1 |
| Some of the site is classified as wetlands; some impact to building likely | 2 |
| Some of the site is classified as wetlands; little or no impact to building | 3 |
| Site has no wetlands | 4 |

### Potential for Hazardous Materials

**Criteria:**
The site should be free of evidence of past use by industrial functions, unregulated storage of items containing hazardous materials or know disposals of hazards. A site assessment may be required. Evaluate as follows:

| **Evaluation:** | **Scores:** |
|---|---|
| 100% of site has known hazmat; significant impact to building | 0 |
| Most of the site has known/probable hazmat; considerable impact likely | 1 |
| Some of the site has known/probable hazmat; some impact likely | 2 |
| Some of the site has known/probable hazmat; little or no impact likely | 3 |
| Site has no known/potential hazmat issues | 4 |

# The Evaluation Report

There are many formats for reporting the results of a site investigation. Reports can range from basic tabulations and narratives with a few maps showing the sites being evaluated to high-powered multi-media presentations incorporating aerial photography, video footage, color graphics and detailed site plans. Appendices can range from a few simple support documents to detailed reports covering everything from archeology to zoning maps. Regardless of the visual and graphic development, a good site investigation report should include the following:

## Introduction and Executive Summary

The introduction should describe the purpose and scope of the investigation listing the type and size of planned facilities which the site would need to support and a brief description of the sites. Toward the front of the report, a summary which indicates which site was selected and the basic rationale for the selection should be provided.

## Maps and Graphics

Because of the type of information normally processed in a site investigation, graphic representations are almost essential. For instance, a metes and bounds narrative of the property may very well be an accurate description of the site's boundaries but a site plan with a graphic representation of those bearings and distances communicates more effectively, the shape and size of the site. Similarly, the sentence, "a stream crosses the property from the north to the south," offers a general description of a key site feature where the same stream drawn on a site plan offers an instant evaluation of its impact on placing a building on the site.

It is helpful not only to have graphic representation of each site and its immediate surroundings showing roadways, vegetation, adjacent structures, etc., but also a smaller scale map showing each of the potential sites and their relationship to one another as well as to key area landmarks. Appendix B shows an example of a site graphic for a rural village. On one simple sheet the following items are indicated: each site, bodies of water, compass directions, roads/paths, vegetation, topography, existing structures and site improvements, utility systems, prevailing winds, winter sun angles and natural and man-made hazards.

Aerial photographs, site cross sections, and photographic panoramas are all useful and fairly standard graphic tools which assisting not only in describing the results of the site investigation but are often instrumental in making the evaluation itself.

## Evaluation Matrix and Narratives

In addition to graphics, tabulated data is often one of the best ways to condense information and allow comparison across a specific category. The tabulations shown in Appendix A and/or the spreadsheet provided on disk with this publication offer suggested formats for this type of information.

# Appendix A
# Site Evaluation Matrix

**Social and Land Use Factors**

| Criteria | WF | Sites | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | xWF | 2 | xWF | 3 | xWF | 4 | xWF |
| Size of Site | | | | | | | | | |
| Proximity to Population to be Served | | | | | | | | | |
| Proximity to Future Expansion of Community | | | | | | | | | |
| Proximity to Important Existing Facilities | | | | | | | | | |
| • | | | | | | | | | |
| • | | | | | | | | | |
| *Year-round Accessibility* | | | | | | | | | |
| Aesthetic Value | | | | | | | | | |
| *Sun Orientation* | | | | | | | | | |
| *Protection from Elements* | | | | | | | | | |
| *Site Drainage* | | | | | | | | | |
| *Proximity to Natural Hazards* | | | | | | | | | |
| Zoning/Land Use | | | | | | | | | |
| Proximity to Fire Response Equipment | | | | | | | | | |
| *Flooding* | | | | | | | | | |
| *Existing Site Development* | | | | | | | | | |
| Access to Outdoor Recreation/Learning | | | | | | | | | |
| Noise | | | | | | | | | |
| *Wetlands* | | | | | | | | | |
| *Potential for Hazardous Materials* | | | | | | | | | |

**TOTALS**

*Note: Italicized Items are also evaluated in either* **Construction Cost Factors** *or* **Maintenance and Operating Cost Factors**

## Appendix A - Site Evaluation Matrix (cont.)

**Construction Cost Factors**

| Criteria | WF | Sites | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | xWF | 2 | xWF | 3 | xWF | 4 | xWF |
| Soils/Foundation Conditions | | | | | | | | | |
| Permafrost Stability | | | | | | | | | |
| Availability of Water Utilities | | | | | | | | | |
| Availability of Sewer Utilities | | | | | | | | | |
| *Availability of Electric Power* | | | | | | | | | |
| Availability of Fuel Storage/Distribution | | | | | | | | | |
| Year-round Accessibility | | | | | | | | | |
| Ease of Transporting Construction Materials | | | | | | | | | |
| Site Availability | | | | | | | | | |
| Site Cost | | | | | | | | | |
| *Site Drainage* | | | | | | | | | |
| *Proximity to Natural Hazards* | | | | | | | | | |
| *Site Erosion* | | | | | | | | | |
| Existing Site Development | | | | | | | | | |
| Wetlands | | | | | | | | | |
| Potential for Hazardous Materials | | | | | | | | | |

**TOTALS**

*Note: Italicized Items are also evaluated in* **Maintenance and Operating Cost Factors**

## Appendix A - Site Evaluation Matrix (cont.)

**Maintenance and Operating Cost Factors**

| Criteria | WF | Sites | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | xWF | 2 | xWF | 3 | xWF | 4 | xWF |
| Site Drainage | | | | | | | | | |
| Flooding | | | | | | | | | |
| Site Erosion | | | | | | | | | |
| Sun Orientation | | | | | | | | | |
| Protection from Elements | | | | | | | | | |
| Proximity to Natural Hazards | | | | | | | | | |
| Alternative Energy Sources | | | | | | | | | |
| Air Inversions/Katabatic Winds | | | | | | | | | |

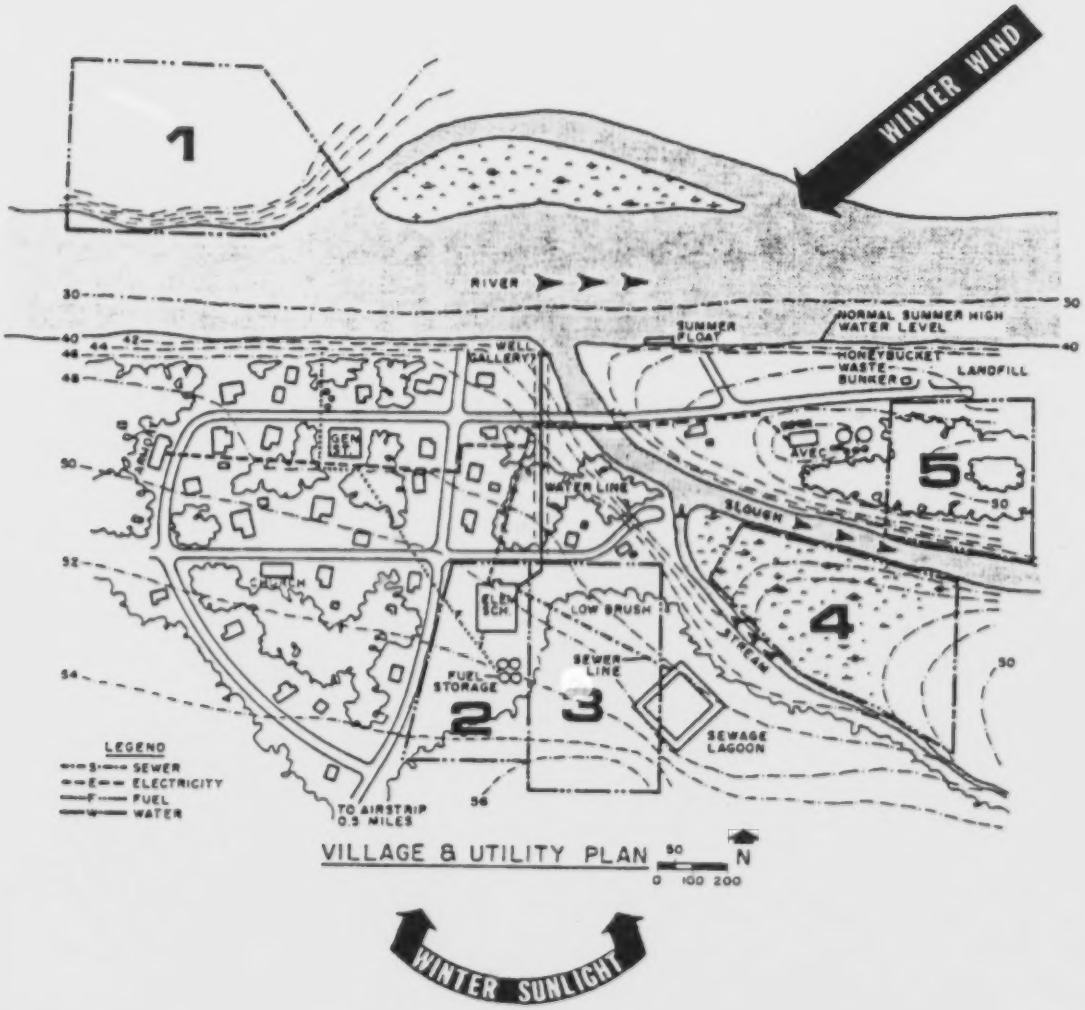
**TOTALS**

**Site Evaluation Summary Table**

| Criteria | Sites | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| **Social and Land Use Factors** | | | | |
| **Construction Cost Factors** | | | | |
| **Maintenance and Operating Cost Factors** | | | | |

**GRAND TOTALS**

# Appendix B
# Sample Site Graphic Analysis




SAMPLE



BEST COPY AVAILABLE